

3-46. **BEAM SPLICE.** Damage affecting more than half of the beam cross-sectional area requires a splice. A repair similar to that shown in Figure 4-3 should be used. Two angles nesting inside the beam are used to span the damaged region. Four AN470AD5 rivets are required thru each skin flange each side of the damaged area. Space web rivet rows approximately one inch apart, the depth of the beam. Three AN470AD5 rivets are required in each row each side of the damaged area.

NOTE

The use of an elevator jig is recommended in order to hold alignment of the structure while the repair is being accomplished.

3-47. **DAMAGE REPAIRABLE BY INSERTION.** Damage to the main beam which is more than five inches in length horizontally requires a complete splice, to be repaired by an insertion member. The insertion member must be of the same material, section and gage as the existing structure. The ends of the insertion member must be butted and spliced to the existing structure, using the repair data in Figure 4-3 and Paragraph 3-46. Damage to either extremity of the beam must be repaired by means of an extension splice.

3-48. **ELEVATOR AUXILIARY BEAM.**

3-49. **DESCRIPTION.** The auxiliary beam is a small channel bent up from .020 24ST alclad sheet inboard of station 40.75, from station 40.75 outboard to the tip it is .016 gage.

3-50. **NEGLIGIBLE DAMAGE.** Smooth dents free of abrasions or cracks in the flanges or web may be classified as negligible damage, provided the damage does not occur to any rivets or bends. Adjacent negligible damage must be at a distance of 10 inches.

3-51. **DAMAGE REPAIRABLE BY PATCHING.** Damage to the elevator auxiliary beam which requires a splice is repairable by splicing with an .032 24ST alclad channel installed within the existing channel. Three AN470AD4 rivets in the upper and lower flanges and two AN470AD4 rivets in the web, making a total of eight rivets on each side of the damaged area, are required. Use existing rivet holes in the flanges whenever possible, spacing rivets at approximately 3/4 of an inch. Attach the skin to the flange with repair rivets.

3-52. **ELEVATOR RIBS.**

3-53. **DESCRIPTION.** (See figure 3-1.) All three ribs are channels formed of 24ST alclad sheet. The two main inboard ribs at stations 5.603 and 40.75 are stiffened by beads. The end rib has a plain web with neither lightening holes nor beads. It extends 7-3/16 inches forward of the elevator hinge line, and the elevator balance weight is riveted to it. Nose and trailing edge ribs are riveted to main and auxiliary spar webs, respectively.

3-54. **NEGLIGIBLE DAMAGE.** Smooth dents free of cracks and abrasions and clear of lightening hole flanges and bends may be disregarded, provided the dents do not exceed a depth of 1/8 inch and one inch in diameter and adjacent dents are at a distance of 10 inches, dents exceeding the above limits, and bent flanges, subsequently bumped back to contour without cracking or creasing the rib may be classified negligible damage. Scratches which do not penetrate beyond the alclad coating may be considered

negligible damage.

3-55. **DAMAGE REPAIRABLE BY PATCHING.** Damage to the ribs which may vary in extent and location must be repaired in accordance with the repair data shown in figure B-5.

3-56. **DAMAGE NECESSITATING REPLACEMENT.** Replace ribs which have been damaged extensively and which would require considerable repair work.

3-57. **ELEVATOR TRIM TAB.**

3-58. **DESCRIPTION.** (See figure 3-1.) The elevator trim tab is composed of a single sheet of 24ST alclad wrapped around five former ribs, giving the tab a hemispherical leading edge, with a sharp trailing edge produced by riveting the two edges of the sheet together. Hinge brackets are located at each end and at the midpoint of the leading edge.

3-59. **ELEVATOR TRIM TAB SKIN.**

3-60. **DESCRIPTION.** The tab skin consists of .016 24ST alclad sheet.

3-61. **NEGLIGIBLE DAMAGE.** Smooth shallow dents located anywhere on the tab skin and free of cracks and abrasions may be disregarded, provided these dents do not exceed a depth of 1/8 inch and a diameter of one inch, and adjacent dents are at distance of 10 inches. Dents exceeding the above limits and subsequently bumped back to contour without cracking or creasing the skin may be classified negligible damage. Scratches which do not penetrate beyond the alclad coating may be considered negligible damage.

3-62. **DAMAGE REPAIRABLE BY PATCHING.** Damage to the tab skin which exceeds the limits of negligible damage must be repaired by means of a flush skin patch as in figure B-1 or an outside skin patch as shown in figure B-3. If the patch covers the internal structure, attach the patch to the internal structure, using the same size rivets and spacing as in the original structure.

3-63. **ELEVATOR TRIM TAB RIBS.**

3-64. **DESCRIPTION.** All elevator trim tab ribs are bent up out of 24ST alclad sheet.

3-65. **NEGLIGIBLE DAMAGE.** Smooth dents free of cracks and abrasions in the flanges and the web may be classified negligible damage.

3-66. **DAMAGE REPAIRABLE BY PATCHING.** Damage to ribs which exceeds that specified as negligible may be repaired in accordance with figure B-5.

3-67. **VERTICAL STABILIZER.**

3-68. **DESCRIPTION.** (See Figure 3-1.) The structural members are fabricated of 24ST alclad sheet. The tip and a dorsal fin are formed of 5250 aluminum alloy. The structure consists of four formed ribs, a full span beam, to which the rudder is hinged and stringers riveted inside the skin, about 30% and 60% of the chord aft of the stabilizer leading edge. The tips are removable and are attached to the top rib with plate nuts and screws. The dorsal fin, fair the vertical and horizontal stabilizer into the fuselage contours. The section between the leading edges of the vertical and horizontal stabilizer is detachable.

3-69. **ACCESS FOR REPAIRS.** Access to repair internal